

a.)

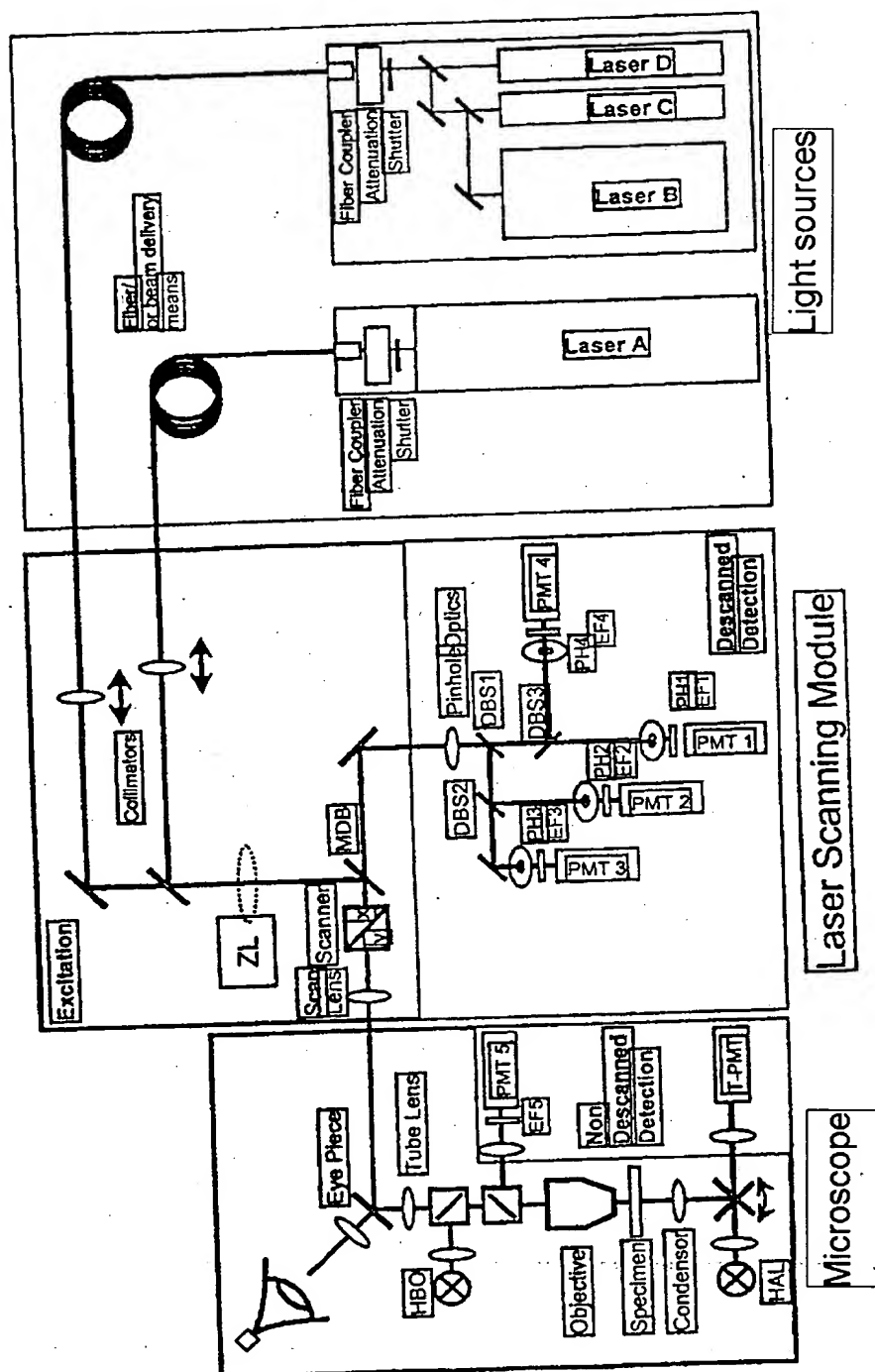
a) Single-photon absorption

b.)

b) Multiphoton absorption

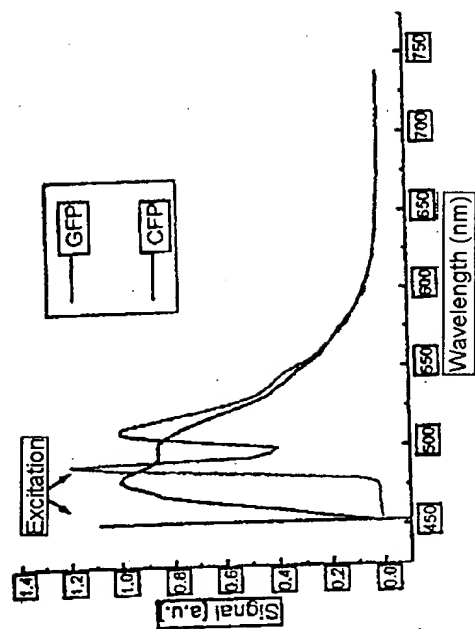
Figure 1:

000000000000000000000000

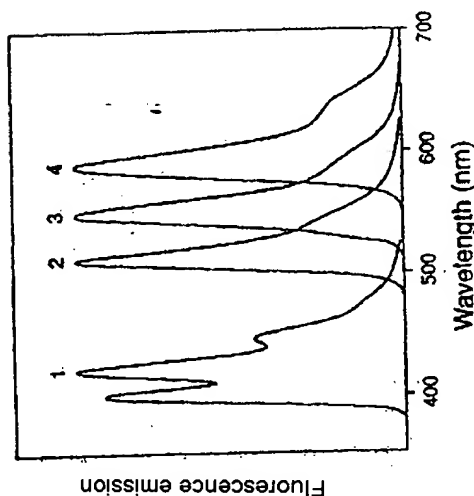


LSM construction (prior art)

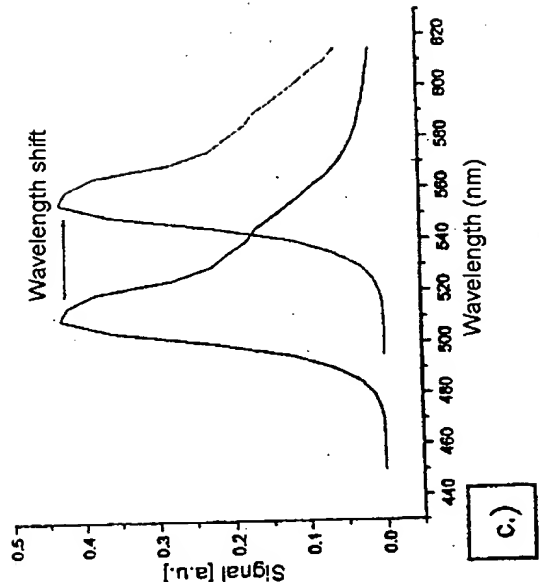
Figure: 2



b.)



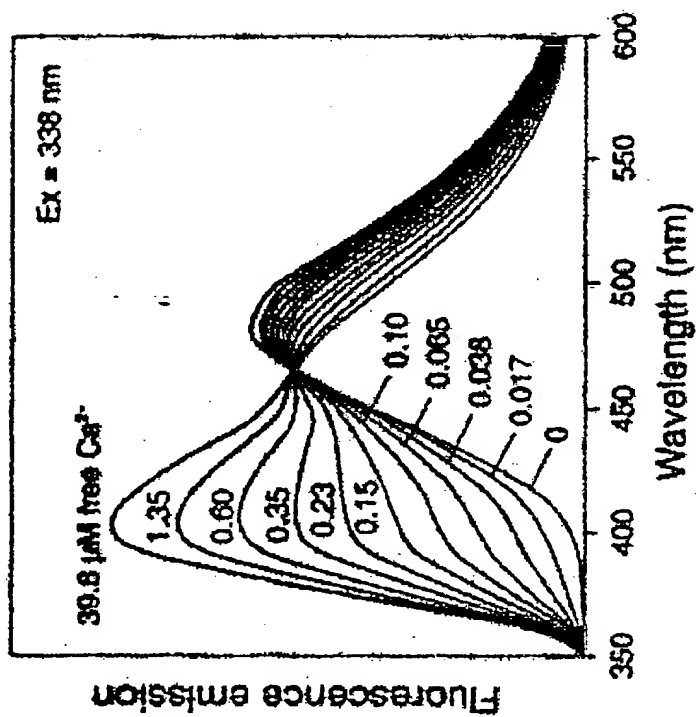
a.)



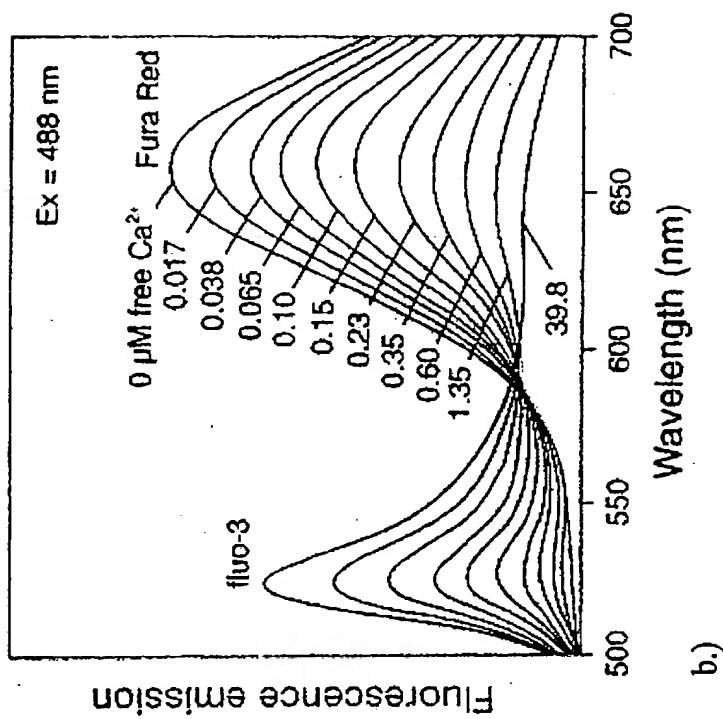
c.)

Typical spectra a) Dyes, b) fluorescent proteins  
c) wavelength shift as a function of environment, d) FRET

Figure: 3



a.)



b.)

**Figure: 4**

Typical spectra with ratiometric measurements

a) a dye with emission ratio; b) two dyes with ion-dependent signals

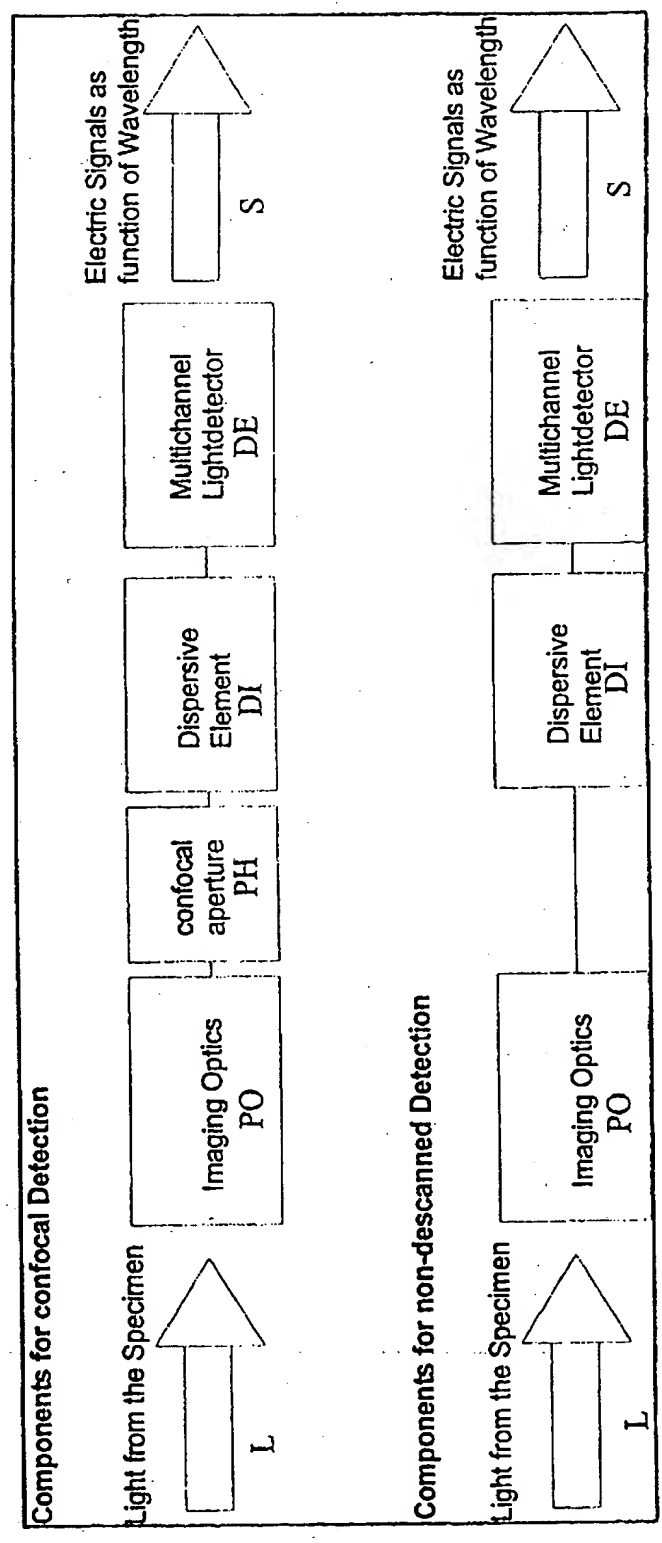


Figure: 5

Block diagram showing construction of detector unit-optics

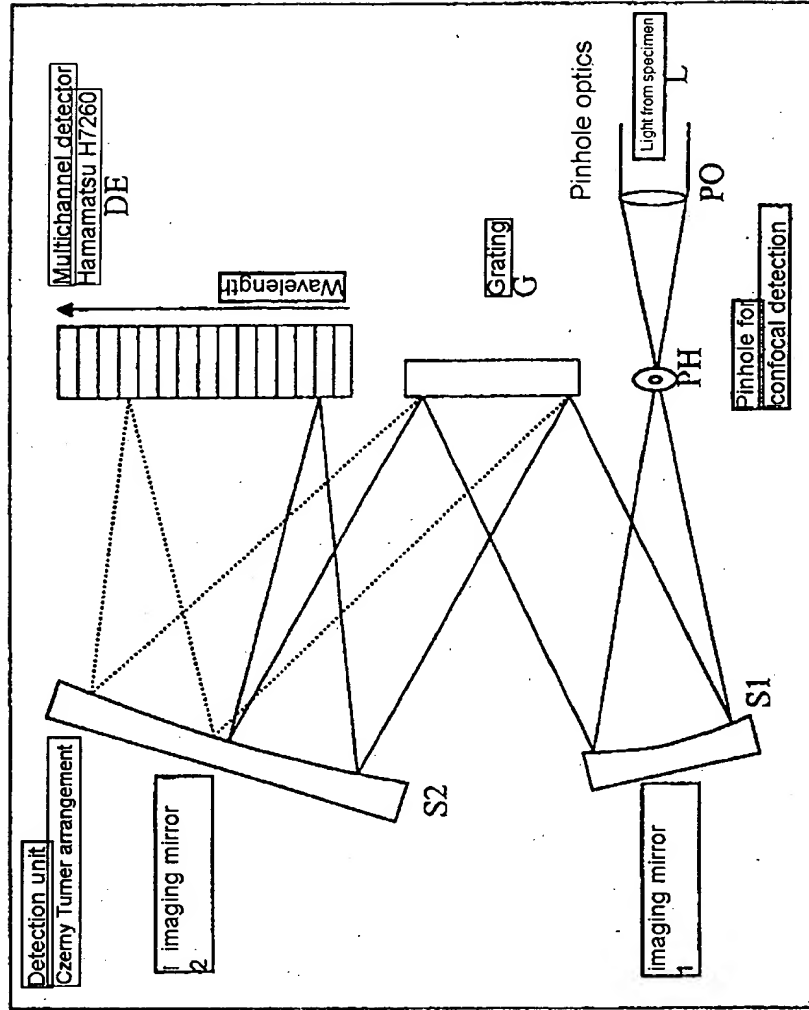
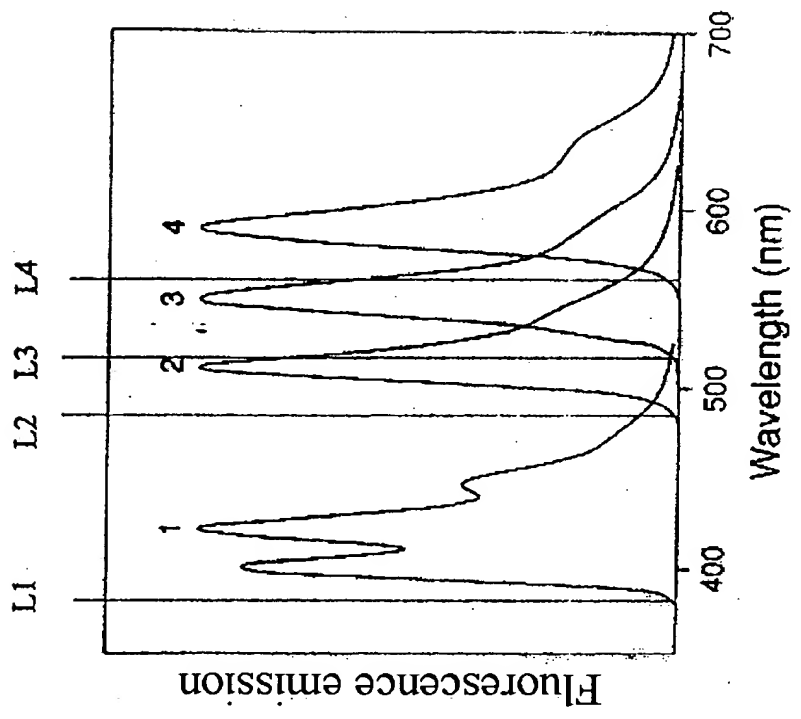


Figure: 6

Example for detector unit-optics construction

FD4080" STE42660



b.)

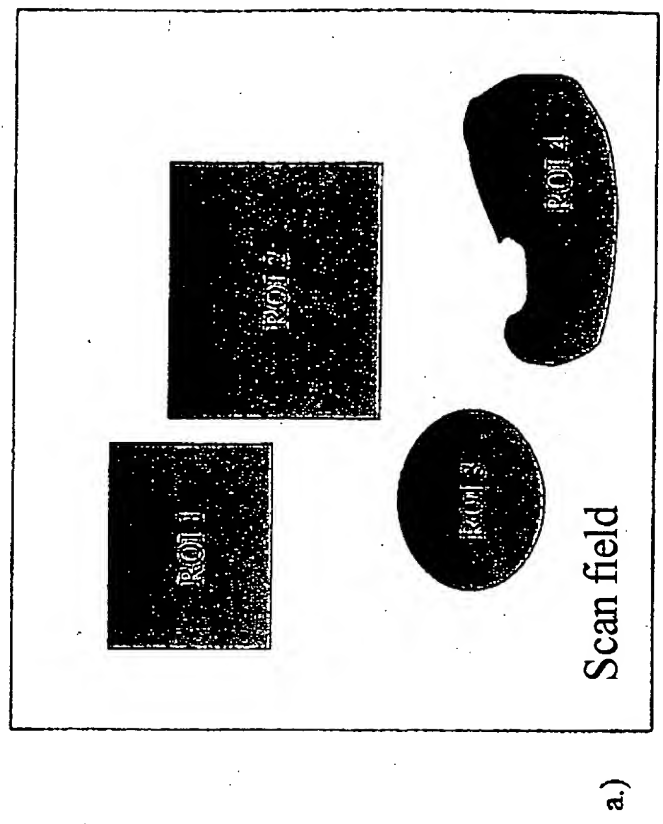


Figure: 7

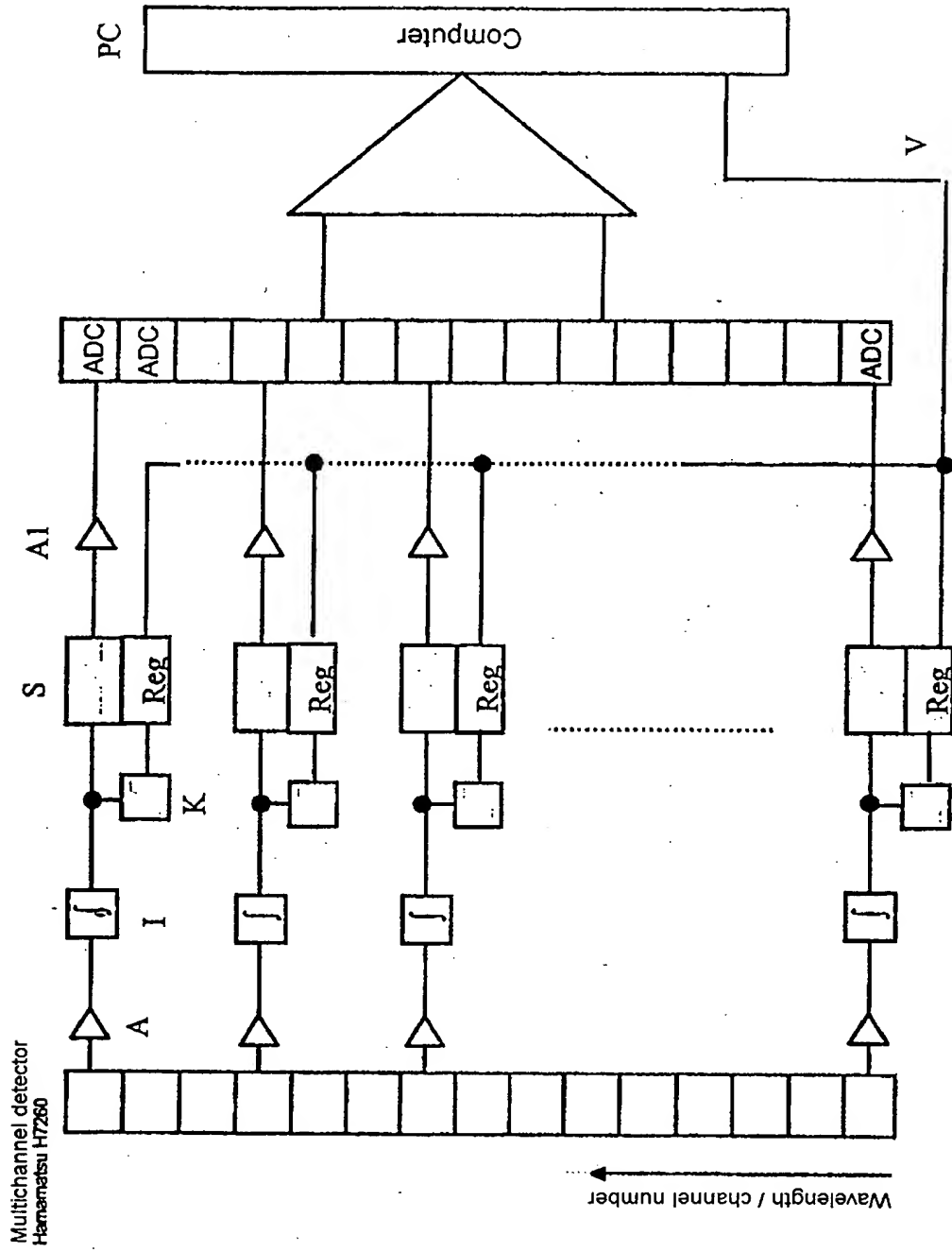


Figure 8

Construction example of electronics for digital evaluation



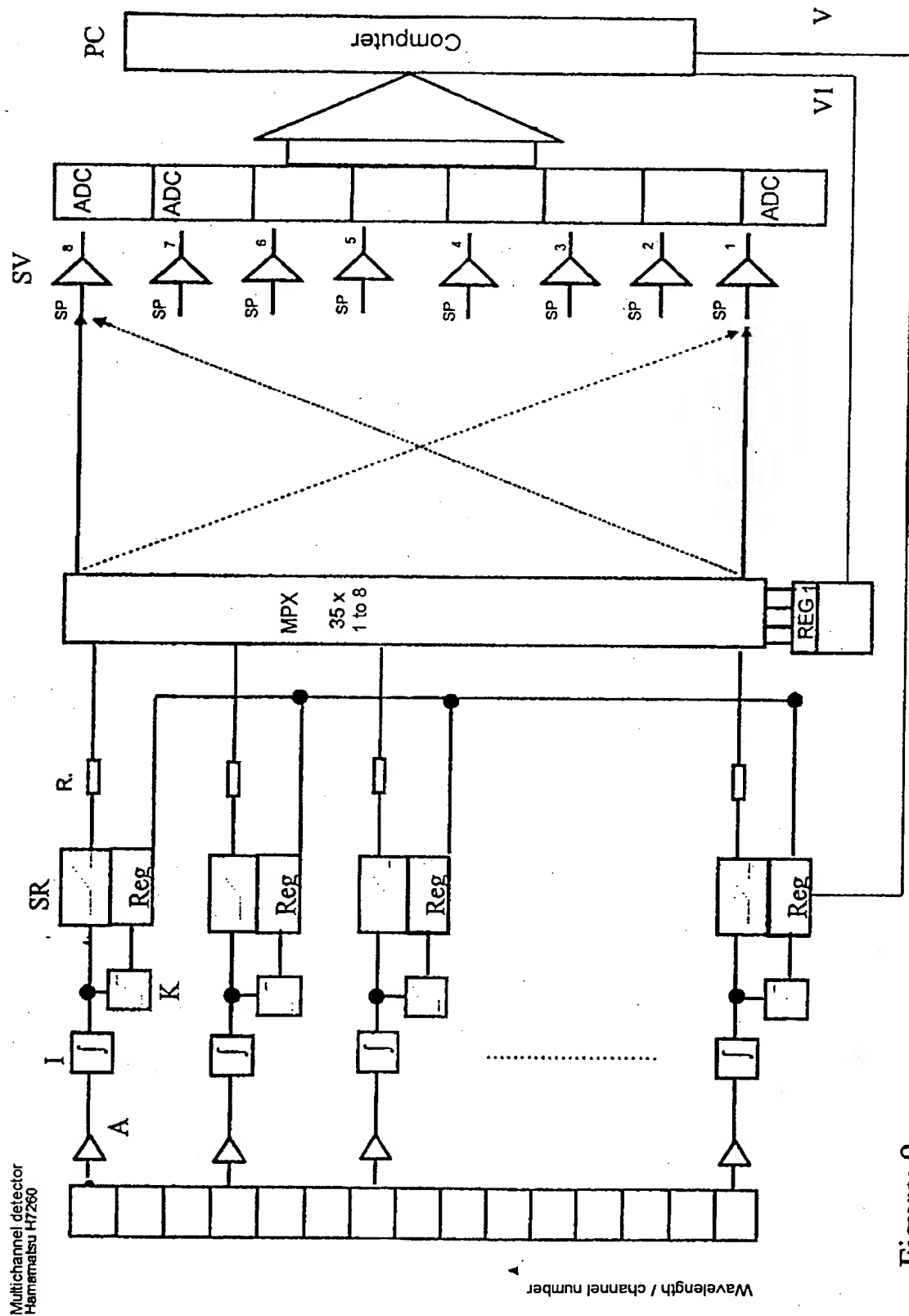


Figure: 9

Example of construction of electronics for analog signal processing